



VS Lighting Solutions for Household Appliances

For Household Appliances

LED Solutions and Lampholders
for Ovens, Steam Ovens, Pyrolytic
Ovens and Microwaves

LED Solutions and Lampholders
for Cooker Hoods

LED Solution for Dishwasher
Applications

LED Lamp and Lampholders
for Refrigerators

LED Constant-voltage and
Constant-current Drivers

Vossloh-Schwabe

Vossloh-Schwabe is not merely a provider of top-quality system solutions for the lighting industry, but above all makes a competent and innovative contribution to setting market trends in the field of lighting for household appliances.

Employing approximately 1000 people in more than 20 countries, Vossloh-Schwabe is represented all over the world. As a subsidiary of the Japanese Panasonic Group, VS can draw on extensive resources for R&D as well as for international expansion activities. A highly motivated workforce, comprehensive market knowledge, profound industry expertise as well as eco-awareness and environmental responsibility show Vossloh-Schwabe to be a reliable partner for the provision of optimum and cost-effective lighting solutions. Vossloh-Schwabe's dedication to delivering superior quality is reflected in its ISO 9001 certification.



■ CUSTOMISED SOLUTIONS

Your project, our solution

We collaborate with our customers and pay attention to their needs in order to develop customised lighting solutions. Whether the task involves the realisation of a single LED module or the creation of a turnkey system, our advanced R&D departments ensure the wishes of our customers come true.

R&D – ideas take shape

Our R&D departments are constantly engaged in testing new materials and innovative technologies in order to offer cutting-edge solutions to create optimum lighting conditions. Using product ideas provided by our customers as a basis, our R&D teams design bespoke solutions that suit the given requirements, that can later be finessed into detailed features and ultimately guide the implementation process to create the customised product.

One stop, one shop – In-house creation of complete products

We offer complete solutions that are made entirely within the Vossloh-Schwabe Group using perfectly matched components with very high efficiency ratings.

In-house photometric testing

All necessary photometric test can be carried out at VS. Cutting-edge equipment is used to measure all optical, chromatic and radiometric values as well as to carry out thermal simulations. These kinds of thermal and optical simulations can help to gear the development of a lighting solution to suit the respective customer specific applications at a very early stage in the planning process. The continuous monitoring process during every single project development step allows us to ensure top quality standards.

Know-how and global presence at your disposal

Using our experience and expertise, we carefully assist our customers – from first prototype production straight through to the final product. In addition, our consolidated production processes make for a highly flexible manufacturing service, enabling anything from just a few pieces right up to a mass production. Moreover, our widespread global presence reflects the importance we attach to staying close to both our customers and the market, which allows us to provide first-class customer and highly efficient logistics services.

www.vossloh-schwabe.com

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LED Solutions and Lampholders

For Ovens, Steam Ovens, Pyrolytic Ovens and Microwaves

■ OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field



For ovens, steam ovens, pyrolytic ovens



For microwaves

Assembly information



Cut-out Ø 35.5 mm



Cut-out Ø 48 mm



Cut-out 55x70 mm

Approvals



CE conformity



ENEC approved



UL recognized

OVENS

LEDSpots for Ovens

For cut-out 35.5 mm / 1.398 in

Colour rendering:

$R_a > 80$

Fixing:

click-in



E501176

Extreme O

For cavity lighting

Lens material:

borosilicate glass

Beam angle:

60°

Colour temperatures

LO 004:

3000 K or 4000 K

LO 001/LO 012:

3000 K or 4500 K

t_c max.:

120 °C / 248 °F

Lumen maintenance:

L70/B50 6,000 hrs.

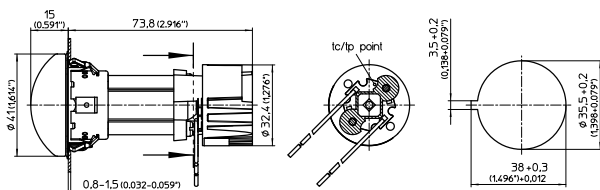
(t_p = 110 °C / 230 °F)

Leads:

PTFE 0.50 mm² / AWG20

Packaging unit:

45 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LO 004*	12 V	85	175	—	2.1
LO 012	5 V	105	700	—	3.4
LO 001	700 mA	105	—	3.0	2.1

Tolerances of electrical and optical data: $\pm 10\%$

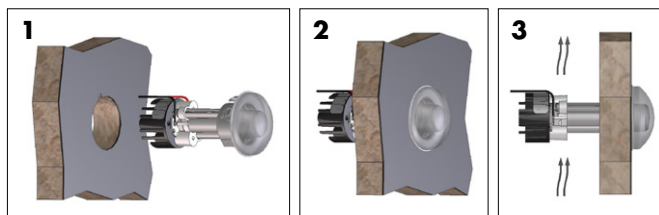
Emission data at t_p = 85 °C / 185 °F (4000/4500 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

Mounting instructions

1. Push the LED oven lamp into position until it clicks.
2. With that firmly in place, connect the leads.
3. Make sure that the LED oven lamp's heat sink is skimmed by the air flow at proper temperature.



LEDSpots for Ovens

For cut-out 55x70 mm / 2.165x2.756 in

Colour rendering: $R_a > 80$

Fixing: click-in



OVENS

Extreme RL

For cavity lighting

Lens material: borosilicate glass

Beam angle: 43°

Colour temperatures

LO 010: 3000 K or 4000 K

LO 011: 3000 K or 4500 K

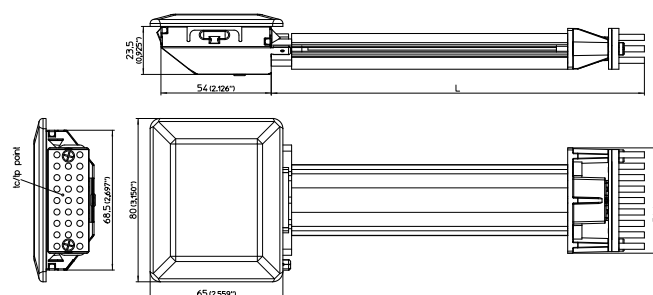
t_c max.: 120 °C / 248 °F

Lumen maintenance: L70/B50 6,000 hrs.

($t_p = 110$ °C / 230 °F)

Leads: PTFE 0.50 mm² / AWG20

Packaging unit: 32 pcs. (H195) / 16 pcs. (H318)



Type	Input supply	Typ. luminous flux (lm)	Typ. current mA	Typ. voltage V	Power consumption W
LO 010 (H195)	12 V	115	367	—	4.4
LO 010 (H318)	12 V	110	367	—	4.4
LO 011 (H195)	700 mA	160	—	5.9	4.1
LO 011 (H318)	700 mA	150	—	5.9	4.1

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85$ °C / 185 °F (4000/4500 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

Type	Length L	
	mm	inch
H195	195	7.68
H318	316	12.44

Mounting instructions

1. Push the LED oven lamp into position until it clicks.
2. With that firmly in place, connect the leads.
3. Make sure that the LED oven lamp's heat sink is skimmed by the air flow at a proper temperature.



OVENS

Lampholders for Ovens

For cut-out 35.5 mm / 1.398 in

Nominal rating E14: 2/250

Contacts:

earth spade connector 6.3x0.8

Fixing:

click-in



E14 Lampholders

Temperature rating:

T270/T240 (518/464 °F)

Housing material:

LCP/PPS

Lamp:

25 W

Lens:

soda-lime glass

Connection:

spade connectors

Packaging unit:

150 pcs.

Type:

64327

Temperature rating:

T300 (572 °F)

Housing material:

porcelain

Lamp:

15 W

Lens:

soda-lime glass

Connection:

spade connectors

Packaging unit:

250 pcs.

Type:

51212

Temperature rating:

T300 (572 °F)

Housing material:

porcelain

Lamp:

25 W

Lens:

soda-lime glass

Connection:

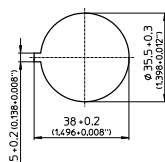
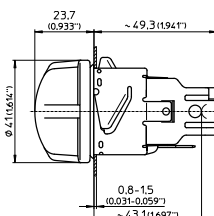
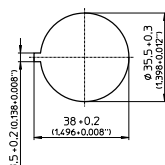
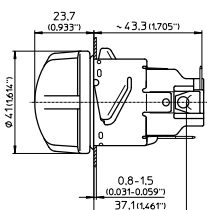
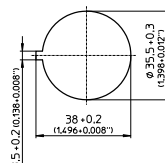
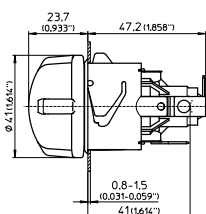
spade connectors

Packaging unit:

200 pcs.

Type:

51211



Lampholders for Ovens

For cut-out 35.5 mm / 1.398 in

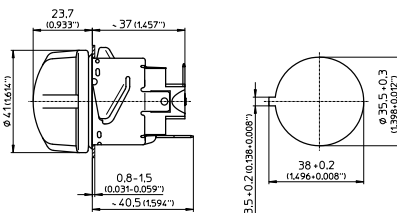
Nominal rating G9: 2/250
 Nominal rating G4: 10/24
 Contacts: earth spade connector 6.3x0.8
 Fixing: click-in



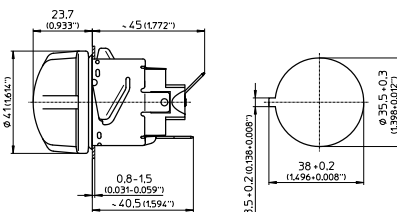
OVENS

G9 Lampholders

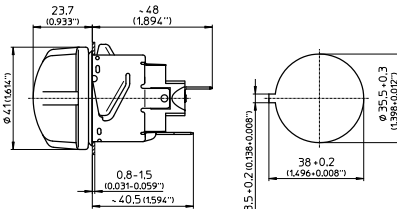
Temperature rating: T350 (662 °F)
 Housing material: steatite
 Lamp: 25 W/40 W
 Lens: soda-lime glass
 Connection: spade connectors
 Packaging unit: 96 pcs.
Type: 33850



Temperature rating: T350 (662 °F)
 Housing material: steatite
 Lamp: 25 W/40 W
 Lens: soda-lime glass
 Connection: spade connectors
 Packaging unit: 96 pcs.
Type: 33855

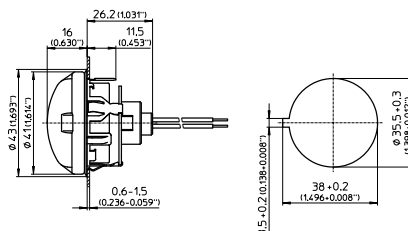


Temperature rating: T350 (662 °F)
 Housing material: steatite
 Lamp: 25 W/40 W
 Lens: soda-lime glass
 Connection: spade connectors
 Packaging unit: 96 pcs.
Type: 33860



G4 Lampholders

Temperature rating: T300 (572 °F)
 Housing material: porcelain
 Lamp: 20 W
 Lens: soda-lime glass
 Leads: PTFE 0.75 mm² / AWG20
 Packaging unit: 200 pcs.
Type: 32797

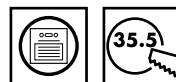


STEAM OVENS

Lampholders for Steam Ovens

For cut-out 35.5 mm / 1.398 in

Nominal rating G9: 2/250
 Nominal rating G4: 10/24
 Contacts: earth spade connector 6.3x0.8
 Fixing: click-in



Compatible Lampholders

Suitable for lampholders

Type	Base	Material	T-rating	Connection	Lamp
33850	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33855	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33860	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
32797	G4	porcelain	T300 (572 °F)	leads	20 W

Accessories

Pagoda glass

Material:

borosilicate glass

Fixing:

screw

Type:

94052

O-ring housing

Material:

PTFE

Type:

98092

O-ring gasket

Material:

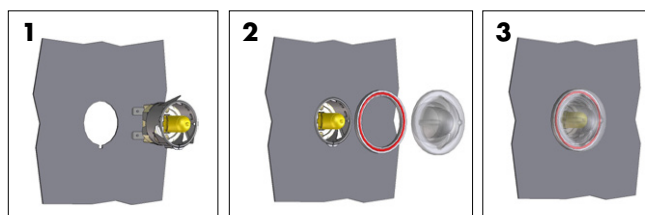
high-temperature silicone

Type:

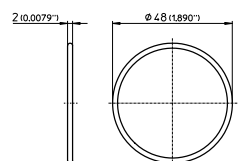
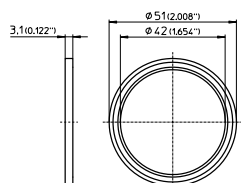
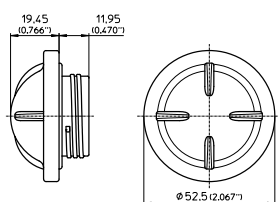
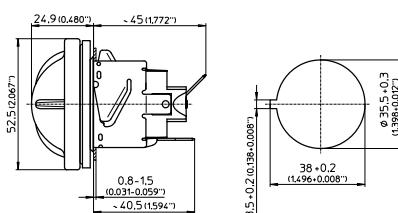
98093

Mounting instructions

1. Push the lampholder into position until it clicks.
2. Push the o-ring gasket into the o-ring housing's groove.
Fit this assembly together with the pagoda glass and screw in.
3. With that firmly in place, connect the leads.



Assembled example – Round steam kit



Accessories for Lampholders for Ovens

For cut-out 35.5 mm / 1.398 in



OVENS

Accessories

Flat glass

Material:

soda-lime glass

Fixing:

bayonet

Compatible with

E14 lampholders:

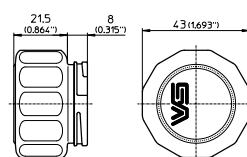
64327, 51212, 51211

G9 lampholders:

33850, 33855, 33860

Type:

94091



Silicone gasket

Material:

high-temperature silicone

Compatible with

E14 lampholders:

64340, 64350, 64327,
51212, 51211

G9 lampholders:

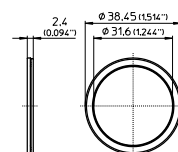
33850, 33855, 33860

G4 lampholders:

32797

Type:

98094



OVENS

Lampholders for Ovens

For cut-out 48 mm / 1.890 in

Nominal rating E14:

2/250

Contacts:

earth spade connector 6.3x0.8

Fixing:

click-in



E14 Lampholders

Temperature rating:

T270 (518 °F)

Housing material:

LCP

Lamp:

15 W

Lens:

soda-lime glass

Connection:

spade connectors

Packaging unit:

180 pcs.

Type:

64326

Temperature rating:

T270 (518 °F)

Housing material:

LCP

Lamp:

25 W

Lens:

soda-lime glass

Connection:

spade connectors

Packaging unit:

180 pcs.

Type:

64336

Temperature rating:

T300 (572 °F)

Housing material:

porcelain

Lamp:

15 W

Lens:

soda-lime glass

Connection:

spade connectors

Packaging unit:

150 pcs.

Type:

51262

Temperature rating:

T300 (572 °F)

Housing material:

porcelain

Lamp:

25 W

Lens:

soda-lime glass

Connection:

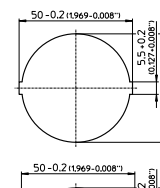
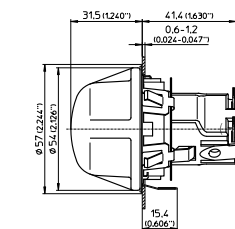
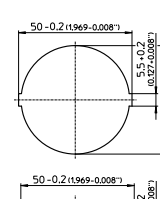
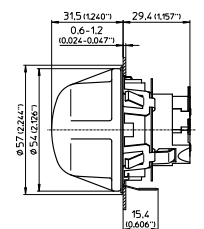
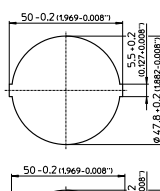
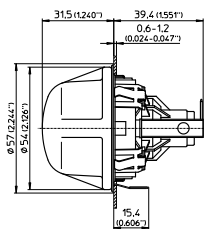
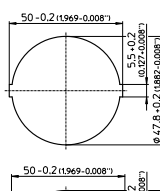
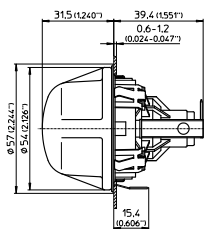
spade connectors

Packaging unit:

150 pcs.

Type:

51261



Lampholders for Ovens

For cut-out 48 mm / 1.890 in

Nominal rating G9: 2/250

Contacts: earth spade connector 6.3x0.8

Fixing: click-in



OVENS

G9 Lampholders

Temperature rating: T350 (662 °F)

Housing material: steatite

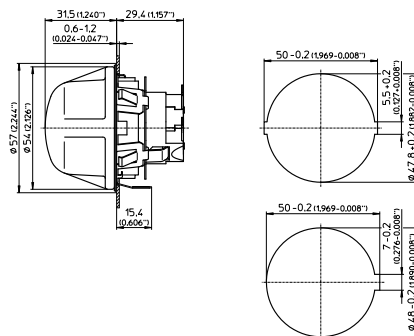
Lamp: 25 W/40 W

Lens: soda-lime glass

Connection: spade connectors

Packaging unit: 150 pcs.

Type: 33865



OVENS

Lampholders for Ovens

For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating E14, G9: 2/250

Contacts: earth spade connector 6.3x0.8

Reflector: aluminium plated steel

Fixing: click-in



E14 Lampholders

Temperature rating: T300 (572 °F)

Housing material: porcelain

Lamp: 25 W

Lens: borosilicate glass

Connection: spade connectors

Packaging unit: 70 pcs.

Type: 51250

G9 Lampholders

Temperature rating: T350 (662 °F)

Housing material: seatite

Lamp: 25 W/40 W

Lens: borosilicate glass

Connection: spade connectors

Packaging unit: 70 pcs.

Type: 33840

Temperature rating: T350 (662 °F)

Housing material: seatite

Lamp: 25 W/40 W

Lens: borosilicate glass

Leads: PTFE 0.75 mm² / AWG20

Packaging unit: 70 pcs.

Type: 33940

Temperature rating: T350 (662 °F)

Housing material: seatite

Lamp: 25 W/40 W

Lens: borosilicate glass

Connection: spade connectors

Packaging unit: 70 pcs.

Type: 33880

Temperature rating: T350 (662 °F)

Housing material: seatite

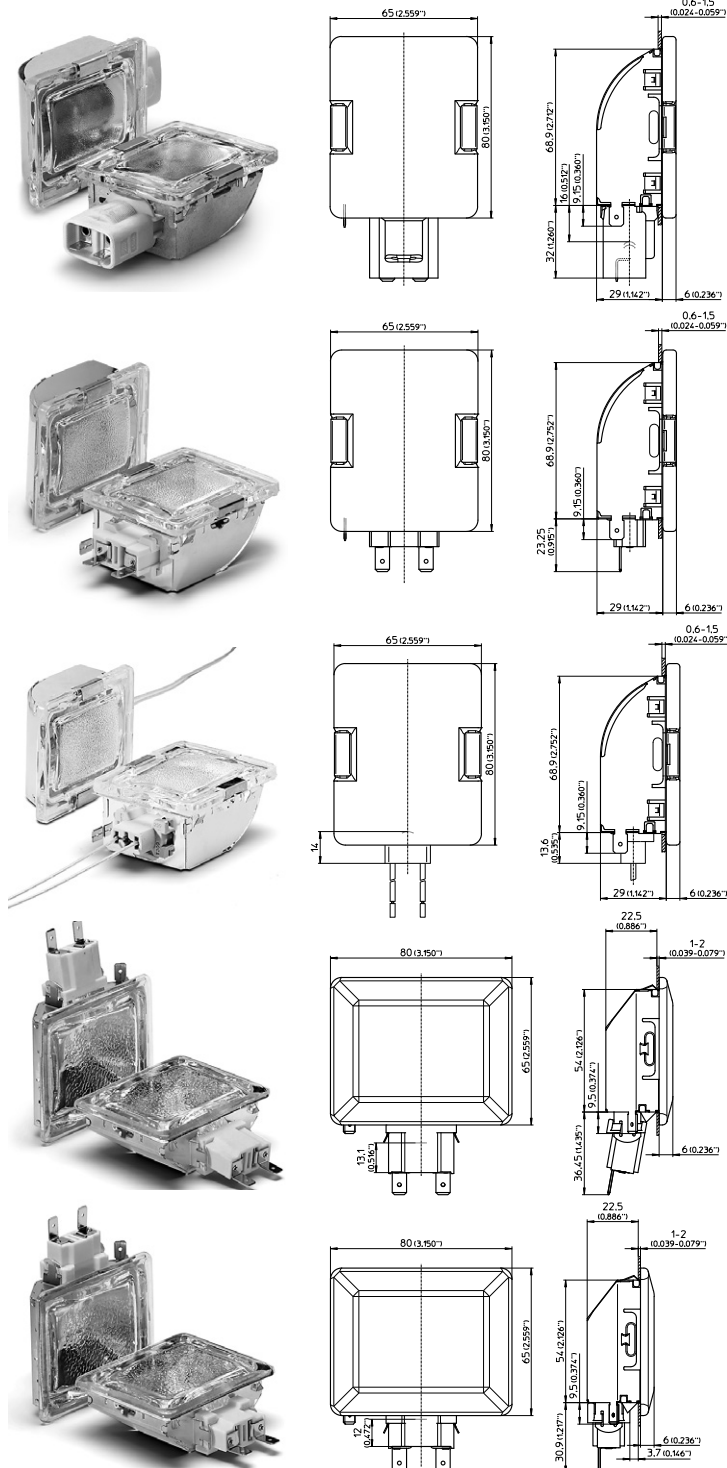
Lamp: 25 W/40 W

Lens: borosilicate glass

Connection: spade connectors

Packaging unit: 75 pcs.

Type: 33885



Lampholders for Ovens

For cut-out 55x70 mm / 2.165x2.756 in

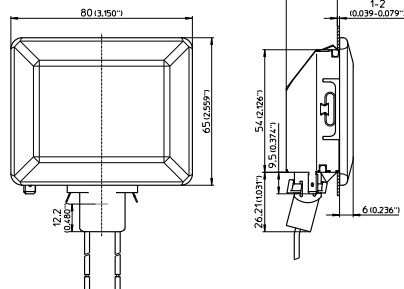
Nominal rating G9: 2/250
 Nominal rating G4: 10/24
 Contacts: earth spade connector 6.3x0.8
 Reflector: aluminium plated steel
 Fixing: click-in



OVENS

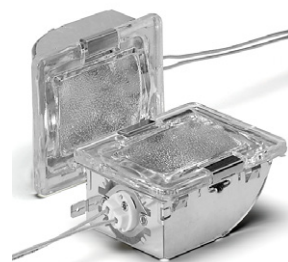
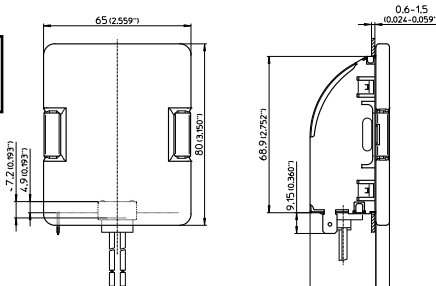
G9 Lampholders

Temperature rating: T350 (662 °F)
 Housing material: steatite
 Lamp: 25 W/40 W
 Lens: borosilicate glass
 Leads: PTFE 0.75 mm² / AWG20
 Packaging unit: 75 pcs.
Type: 33980

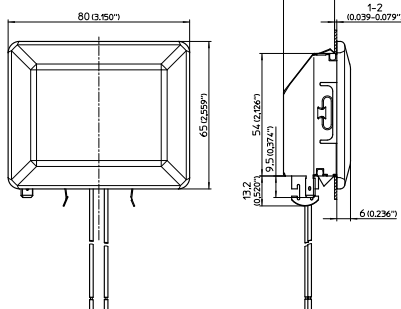


G4 Lampholders

Temperature rating: T300 (572 °F)
 Housing material: porcelain
 Lamp: 20 W
 Lens: borosilicate glass
 Leads: PTFE 0.75 mm² / AWG20
 Packaging unit: 36 pcs.
Type: 32775



Temperature rating: T300 (572 °F)
 Housing material: porcelain
 Lamp: 20 W
 Lens: borosilicate glass
 Leads: PTFE 0.75 mm² / AWG20
 Packaging unit: 36 pcs.
Type: 32777



STEAM OVENS

Lampholders and Accessories for Steam Ovens

For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating E14, G9: 2/250

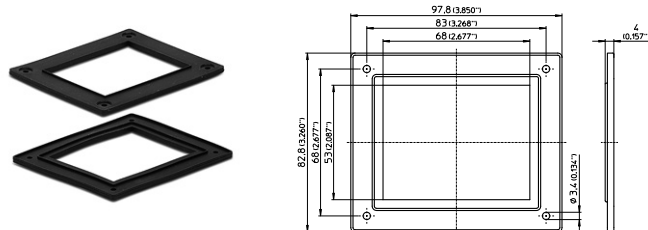
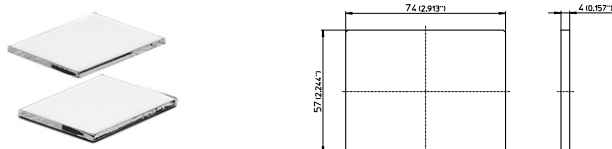
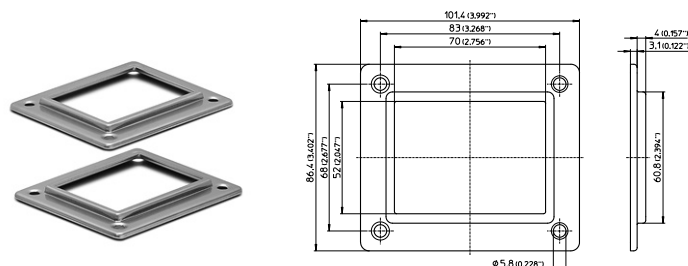
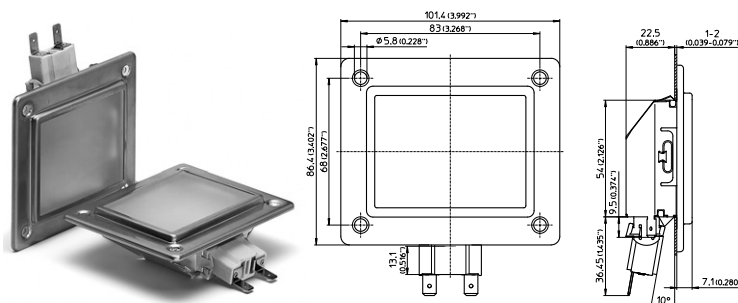
Nominal rating G4: 10/24

Contacts: earth spade connector 6.3x0.8

Fixing: click-in



Assembled example - Rectangular steam kit



Compatible Lampholders

Suitable for lampholders

Type	Base	Material	T-rating	Connection	Lamp
33840	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33940	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
33880	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33885	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33980	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
32775	G4	porcelain	T300 (572 °F)	leads	20 W
32777	G4	porcelain	T300 (572 °F)	leads	20 W

Accessories

Metal frame

Material:

Type:

CrNi

93195

Flat glass

Material:

Type:

tempered glass

94090

Silicone gasket

Material:

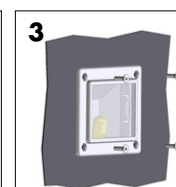
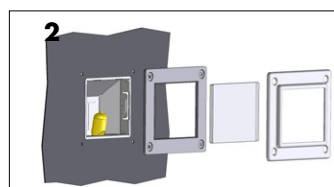
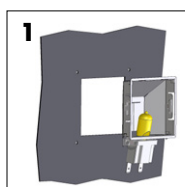
Type:

high-temperature silicone

98090

Mounting instructions

1. Push the lampholder into position until it clicks.
2. Fit the flat glass and the silicone gasket together into the metal frame's slot with the four screws, and fasten the assembly at the oven wall.
3. With that firmly in place, connect the leads.



Lampholders and Accessories for Pyrolytic Ovens

For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating E14, G9: 2/250

Nominal rating G4: 10/24

Contacts: earth spade connector 6.3x0.8

Fixing: click-in



PYROLYTIC OVENS

Compatible Lampholders

Suitable for lampholders

Type	Base	Material	T-rating	Connection	Lamp
33840	G9	steatite	T350	spade connectors	25 W / 40 W
33940	G9	steatite	T350	leads	25 W / 40 W
33880	G9	steatite	T350	spade connectors	25 W / 40 W
33885	G9	steatite	T350	spade connectors	25 W / 40 W
33980	G9	steatite	T350	leads	25 W / 40 W
32775	G4	porcelain	T300	leads	20 W
32777	G4	porcelain	T300	leads	20 W

Accessories

Metal frame

Material:

Type:

CrNi

93195

Flat glass

Material:

Type:

tempered glass

94090

lytherm gasket

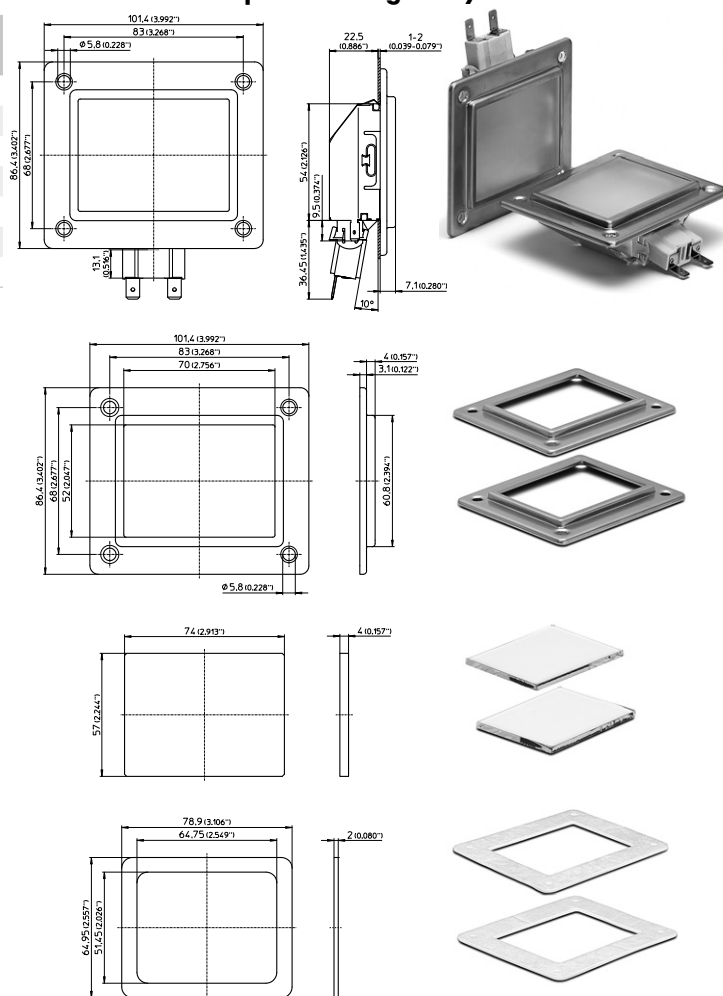
Material:

Type:

lytherm

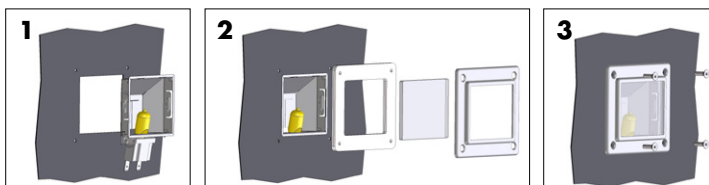
98095

Assembled example - Rectangular lytherm kit



Mounting instructions

1. Push the lampholder into position until it clicks.
2. Fit the flat glass and the lytherm gasket together into the metal frame's slot with the four screws, and fasten the assembly at the oven wall.
3. With that firmly in place, connect the leads.



MICROWAVES

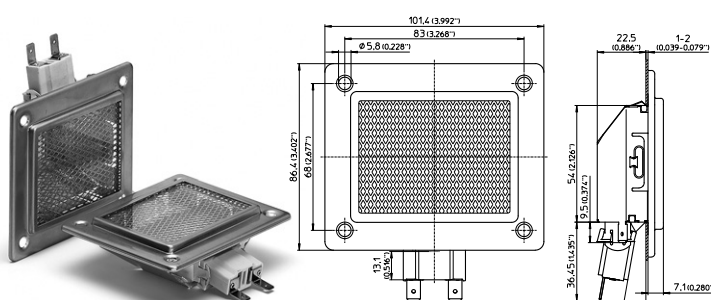
Lampholders and Accessories for Microwaves

For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating G9: 2/250
 Nominal rating G4: 10/24
 Contacts: earth spade connector 6.3x0.8
 Fixing: click-in



Assembled example - Rectangular microwave kit



Compatible Lampholders

Suitable for lampholders					
Type	Base	Material	T-rating	Connection	Lamp
33840	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33940	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
33880	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33885	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33980	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
32775	G4	porcelain	T300 (572 °F)	leads	20 W
32777	G4	porcelain	T300 (572 °F)	leads	20 W

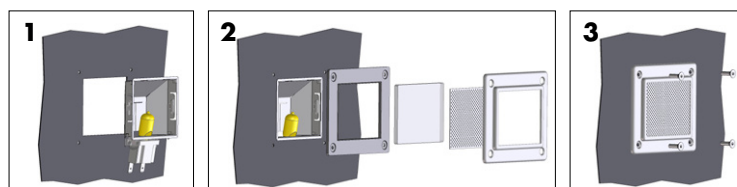
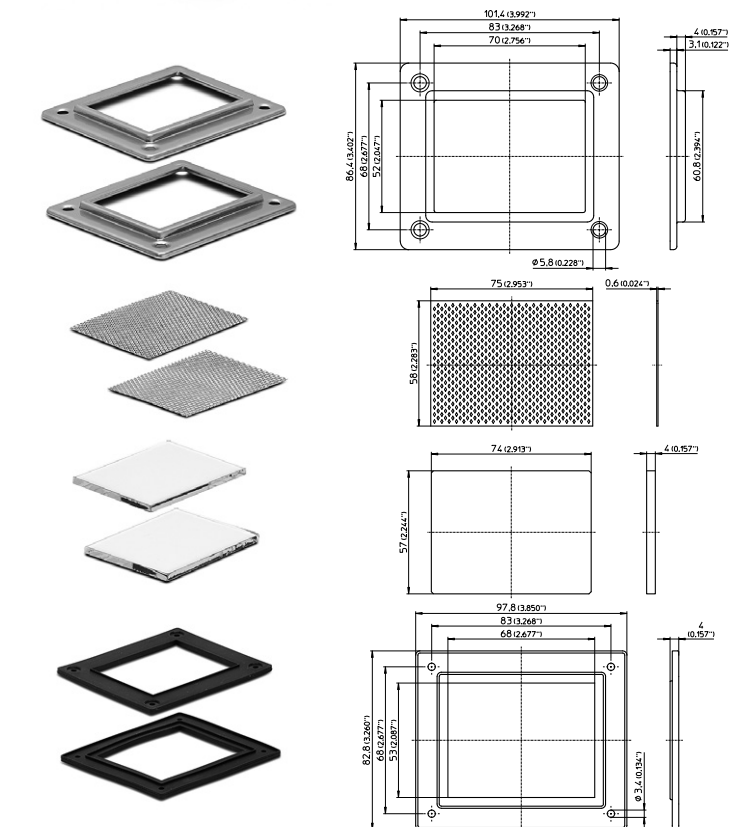
Accessories

Metal frame
 Material: CrNi
Type: 93195

Metal grid
 Material: inox
Type: 93198

Flat glass
 Material: tempered glass
Type: 94090

Silicone gasket
 Material: high-temperature silicone
Type: 98090



Mounting instructions

1. Push the lampholder into position until it clicks.
2. Fit the metal grid, the flat glass and the silicone gasket together into the metal frame's slot with the four screws, and fasten the assembly at the oven wall.
3. With that firmly in place, connect the leads.

Lampholders for Microwaves

For cut-out 35.5 mm / 1.398 in

Nominal rating G4: 10/24
Contacts: earth spade connector 6.3x0.8
Fixing: click-in

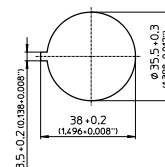
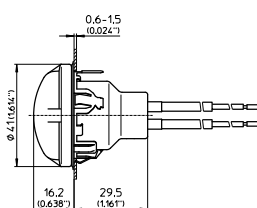


G4 Lampholders

Temperature rating: T350 (662 °F)
Housing material: steatite
Lamp: 20 W
Lens: soda-lime glass
Leads: PTFE 0.75 mm² / AWG20
(braided metal sleeve)

Packaging unit: 200 pcs.

Type: 32495





LED Solutions and Lampholders

For Cooker Hoods

■ OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field



For cooker hoods



Common anode technology

Safety information



IP20 protection



IP40 protection



IP54 protection

Approvals



CE conformity



ENEC approved



UL recognized

LEDSpots for Cooker Hoods

For cut-out 67.5x25.5 mm / 2.657x1.004 in

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



Revo

Lens material:

PC

Beam angle:

60°

Colour temperatures:

3000 K or 4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads on request:

PVC 0.35 mm² / AWG22

Packaging unit:

162 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH035	12 V	120	114	—	1.4
LCH038	24 V	120	58	—	1.4
LCH041	350 mA	110	—	3.2	1.1
LCH041 *	700 mA	210	—	3.2	2.3

Tolerances of electrical and optical data: $\pm 10\%$

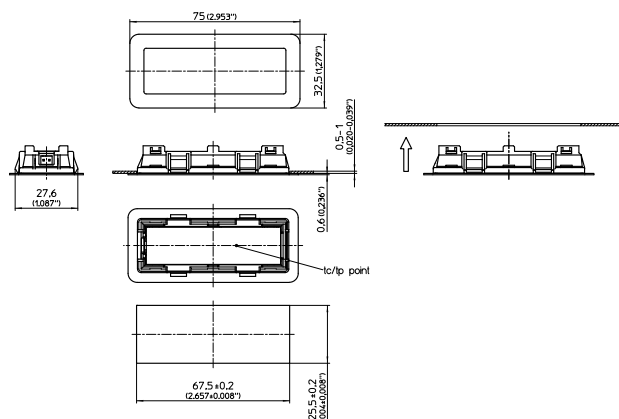
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

* With heat sink

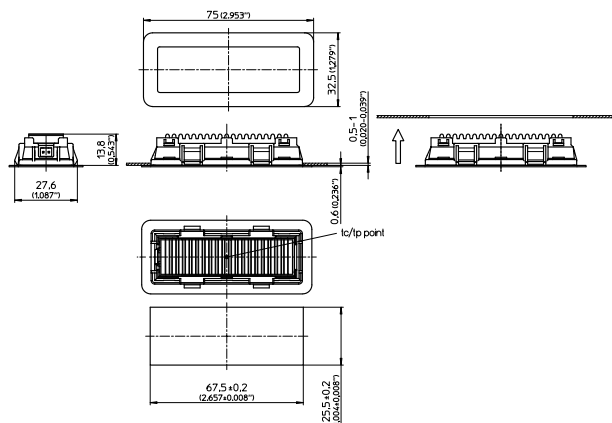
The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

LCH035 / LCH038 / LCH041 (350 mA)



LCH041 (700 mA)



COOKER HOODS

LEDSpots for Cooker Hoods

For cut-out 63.5x20.5 mm / 2.500x0.807 in

Colour rendering:

R_a > 80

Fixing:

stick-on



Revo G

Lens material:

PC

Beam angle:

60°

Colour temperatures:

3000 K or 4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

(T_p = 85 °C / 185 °F)

Leads on request:

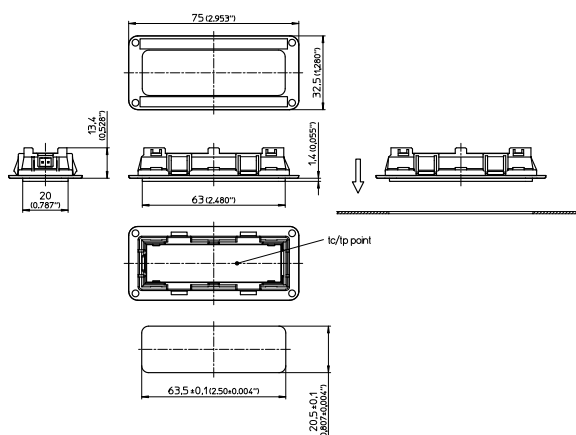
PVC 0.35 mm² / AWG22

Packaging unit:

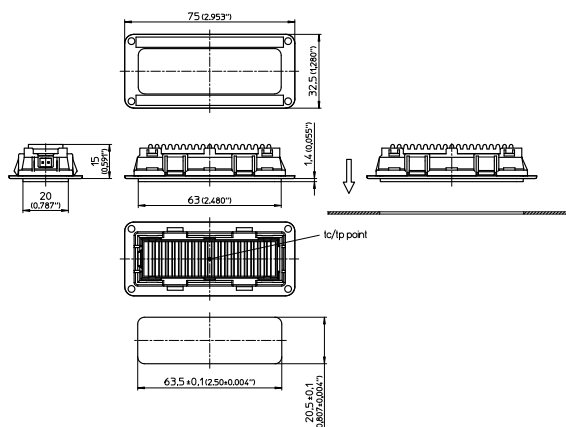
162 pcs.



LCH036 / LCH039 / LCH042 (350 mA)



LCH042 (700 mA)



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH036	12 V	120	114	—	1.4
LCH039	24 V	120	58	—	1.4
LCH042	350 mA	110	—	3.2	1.1
LCH042*	700 mA	210	—	3.2	2.3

Tolerances of electrical and optical data: ±10%

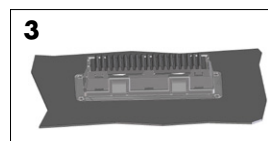
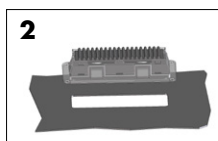
Emission data at T_p = 85 °C / 185 °F (4000 K)

* With heat sink

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Mounting instructions

1. Peel off the cover tape
2. Stick the tape on the cooker hood's metal surface and press down.
3. With that firmly in place, connect the leads.



LEDSpots for Cooker Hoods

For cut-out 67.5x25.5 mm / 2.657x1.004 in

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



Revo P

Lens material:

PC

Beam angle:

60°

Colour temperatures:

3000 K or 4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads on request:

PVC 0.35 mm² / AWG22

Packaging unit:

162 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH034	12 V	120	114	—	1.4
LCH037	24 V	120	58	—	1.4
LCH040	350 mA	110	—	3.2	1.1
LCH040*	700 mA	210	—	3.2	2.3

Tolerances of electrical and optical data: $\pm 10\%$

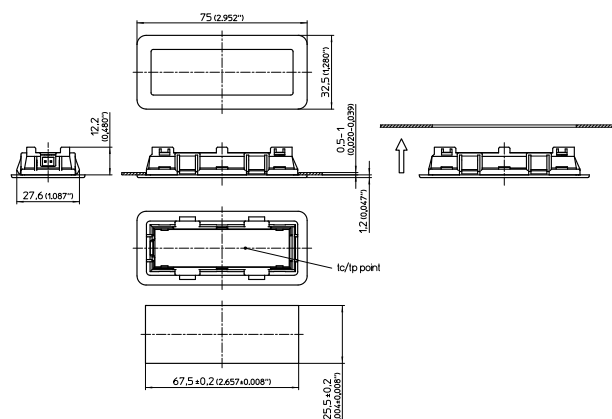
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

* With heat sink

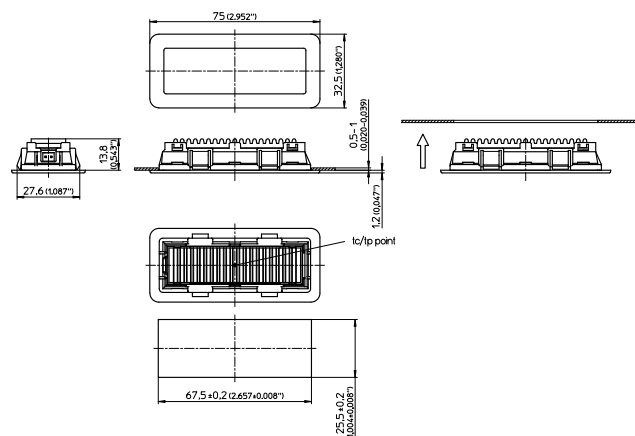
The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

LCH034 / LCH037 / LCH040 (350 mA)



LCH040 (700 mA)



COOKER HOODS

LEDSpots for Cooker Hoods

For cut-out 67.5x25.5 mm / 2.657x1.004 in

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



Revo TW

Lens material:

PC

Beam angle:

60°

Colour temperatures:

tuneable white 2700–4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

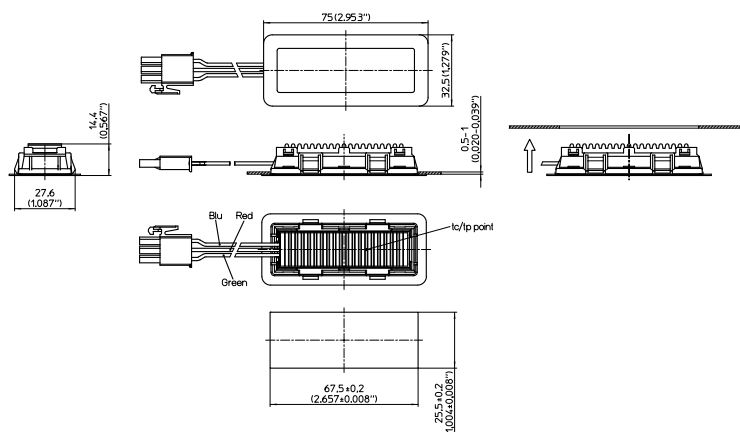
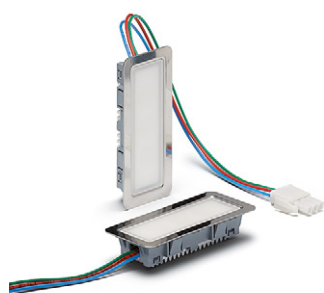
($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads on request:

PVC 0.35 mm² / AWG22

Packaging unit:

162 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH046	12 V	120/135	185/191	—	2.2/2.3

Tolerances of electrical and optical data: ±10%

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

For further technical information for TW technology see page 42

LEDSpots for Cooker Hoods

For cut-out 63.5x20.5 mm / 2.500x0.807 in

Colour rendering: $R_a > 80$

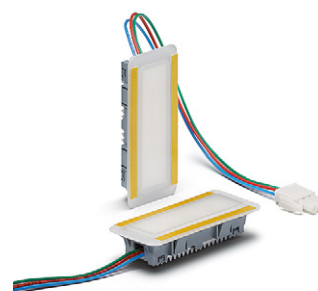
Fixing: stick-on



COOKER HOODS

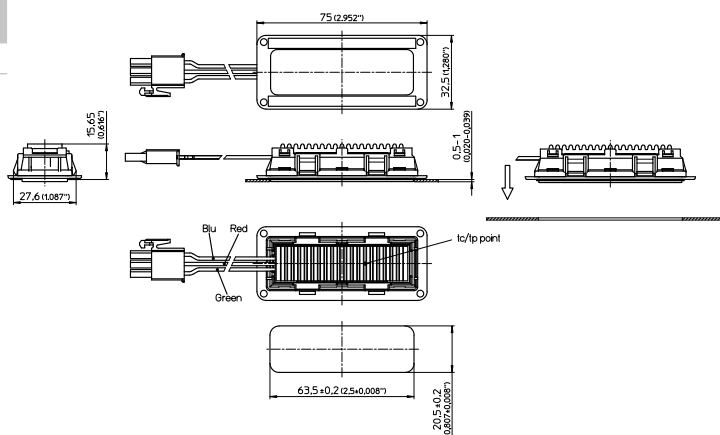
Revo G TW

Lens material:	PC
Beam angle:	60°
Colour temperatures:	tuneable white 2700–4000 K
tc max.:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. ($t_p = 85\text{ °C} / 185\text{ °F}$)
Leads on request:	PVC 0.35 mm ² / AWG22
Packaging unit:	162 pcs.



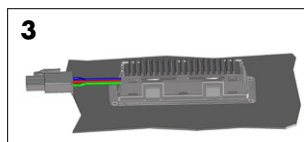
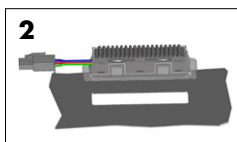
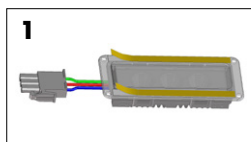
Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH047	12 V	120/135	185/191	—	2.2/2.3

Tolerances of electrical and optical data: $\pm 10\%$
 Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)
 The values contained in this data sheet can change due to technical innovations.
 Any such changes will be made without separate notification.
 For further technical information for TV technology see page 42



Mounting instructions

1. Peel off the cover tape
2. Stick the tape on the cooker hood's metal surface and press down.
3. With that firmly in place, connect the leads.





LEDSpots for Cooker Hoods

For cut-out 67.5x25.5 mm / 2.657x1.004 in

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



Revo S

Lens material:

PC

Beam angle:

70°

Colour temperatures:

3000 K or 4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

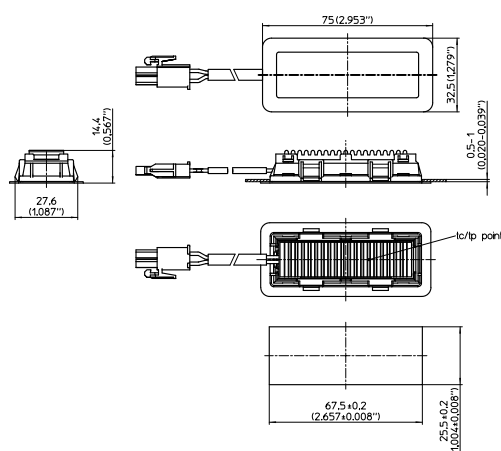
($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads on request:

PVC 0.35 mm² / AWG22

Packaging unit:

162 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH048	12 V	215	210	—	2.5

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

For further technical information for TW technology see page 42

LEDSpots for Cooker Hoods

For cut-out Ø 56 mm / 2.204 in

Colour rendering: $R_a > 80$
Fixing: snap-in clips



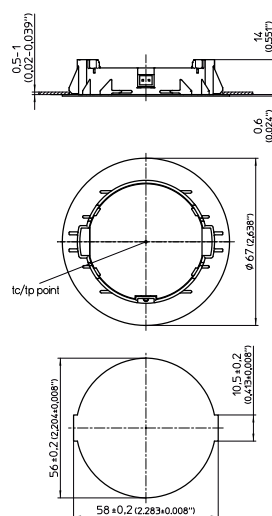
FlatLine

Lens material: PC
Beam angle: 60°
Colour temperatures: 3000 K or 4000 K
tc max.: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs.
($t_p = 85\text{ °C} / 185\text{ °F}$)
Leads on request: PVC 0.35 mm² / AWG22
Packaging unit: 90 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH028	12 V	105	118	—	1.4
LCH043	24 V	130	67	—	1.6
LCH027	350 mA	125	—	3.0	1.1
LCH027	700 mA	235	—	3.1	2.2

Tolerances of electrical and optical data: $\pm 10\%$
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



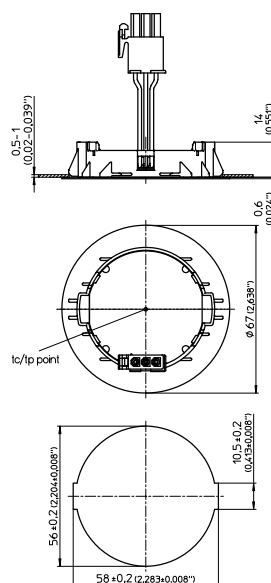
FlatLine TW

Lens material: PC
Beam angle: 60°
Colour temperatures: 2700–4000 K
tc max.: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs.
($t_p = 85\text{ °C} / 185\text{ °F}$)
Leads: PVC 0.35 mm² / AWG22
Packaging unit: 90 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH049	12 V	160/170	99/101	—	2.4/2.4

Tolerances of electrical and optical data: $\pm 10\%$
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



COOKER HOODS

LEDSpots for Cooker Hoods

For cut-out Ø 56 mm / 2.204 in (FlatLine)

For cut-out Ø 26 mm / 1.024 in (Tiny)

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



FlatLine AC

Lens material:

PC

Beam angle:

60°

Colour temperatures:

3000 K or 4000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads:

FEP/FEP double-insulation

0.25 mm²

Packaging unit:

90 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH029	230 V	125	—	—	1.5

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

Tiny

Lens material:

PC

Beam angle:

36°

Colour temperatures

LCH050:

3000 K or 4000 K

LCH044:

3000 K, 4500 K or 5000 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads on request:

PVC 0.35 mm² / AWG22

Packaging unit:

40 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH050	12 V	100	100	—	1.2
LCH044	350 mA	125	—	2.8	1

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

LEDSpots for Cooker Hoods

For cut-out Ø 56 mm / 2.204 in

Colour rendering: $R_a > 80$
Fixing: snap-in clips



DisLine

Lens material: glass
Beam angle: 45° / 55°
Colour temperatures: 3000 K or 4500 K
tc max.: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs.
($t_p = 85\text{ °C} / 185\text{ °F}$)
Leads: PVC 0.35 mm² / AWG22
Packaging unit: 45 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH006	350 mA	130/125	—	3.0	1.1
LCH006	700 mA	240/230	—	3.0	2.1

Tolerances of electrical and optical data: $\pm 10\%$
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

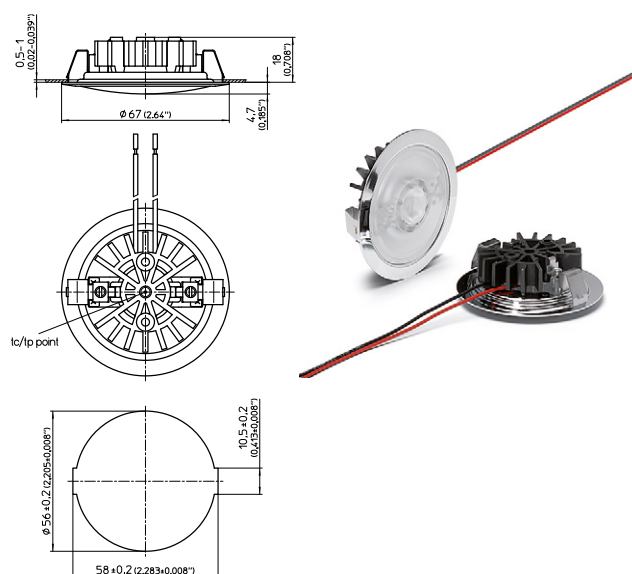
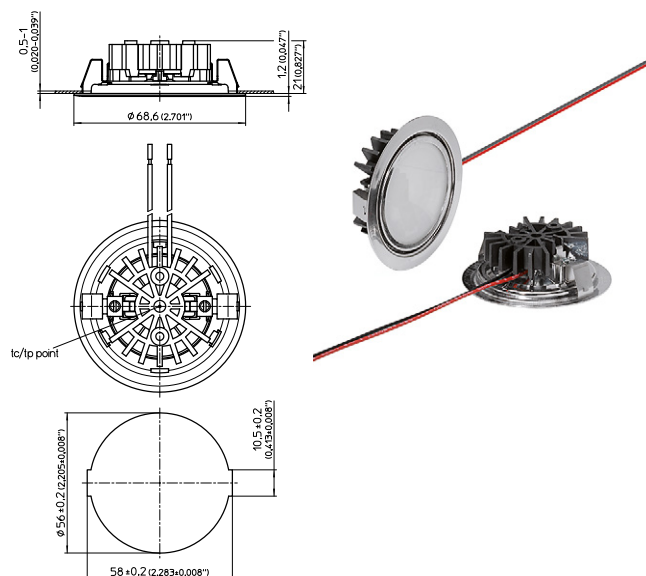
SmartLine

Lens material: PC
Beam angle: 40°
Colour temperatures
LCH051: 3000 K or 4000 K
LCH002: 3000 K or 4500 K
tc max.: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs.
($t_p = 85\text{ °C} / 185\text{ °F}$)
Leads: PVC 0.35 mm² / AWG22
Packaging unit: 45 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH051	12 V	165	167	—	2.0
LCH002	350 mA	120	—	3.0	1.1
LCH002	700 mA	230	—	3.0	2.1

Tolerances of electrical and optical data: $\pm 10\%$
Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000/4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



COOKER HOODS

LEDSpots for Cooker Hoods

For cut-out Ø 56 mm / 2.204 in

Colour rendering:

$R_a > 80$

Fixing:

snap-in clips



StartLine

Lens material:

PC

Beam angle:

36°

Colour temperatures

LCH052: 3000 K or 4000 K

LCH016: 3000 K or 4500 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads:

PVC 0.35 mm² / AWG22

Packaging unit:

45 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH052	12 V	140	167	—	2.0
LCH016	350 mA	110	—	3.0	1.1
LCH016	700 mA	200	—	3.0	2.1

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000/4500 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

IPLine

Lens material:

glass

Beam angle:

42° / 52°

Colour temperatures:

3000 K or 4500 K

tc max.:

100 °C / 212 °F

Lumen maintenance:

L70/B50 50,000 hrs.

($t_p = 85\text{ °C} / 185\text{ °F}$)

Leads:

PVC 0.35 mm² / AWG22

Packaging unit:

45 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH022	350 mA	125/110	—	3.0	1.1
LCH022	700 mA	240/210	—	3.0	2.1

Tolerances of electrical and optical data: $\pm 10\%$

Emission data at $t_p = 85\text{ °C} / 185\text{ °F}$ (4000 K)

The values contained in this data sheet can change due to technical innovations.

Any such changes will be made without separate notification.

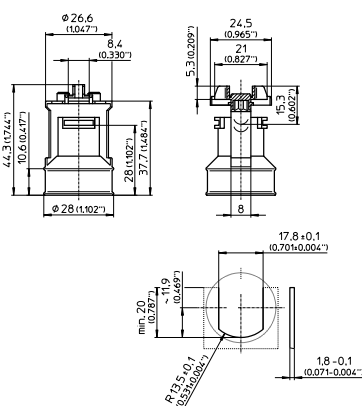
Lampholders for Cooker Hoods

Nominal rating: 2/250
Connection: For solid and stranded conductors
0.5–1.5 mm² /
AWG20/AWG15

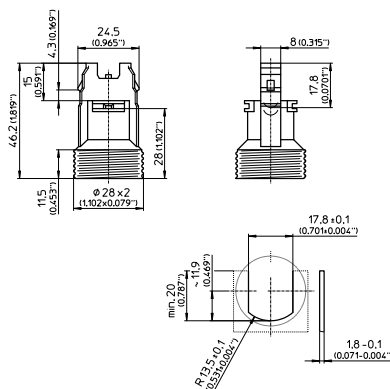


E14 Lampholders

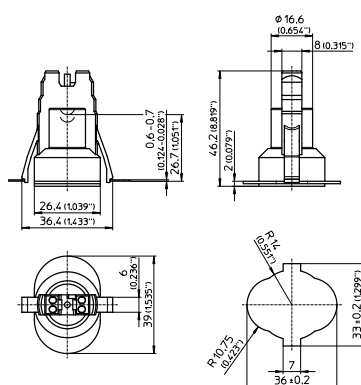
Temperature rating: T210 (410 °F)
Housing material: PET GF
Colour: black or white
Connection: push-in twin terminals
Fixing: insertion
Packaging unit: 1000 pcs.
Type: 64365



Temperature rating: T210 (410 °F)
Housing material: PET GF
Colour: black or white
Connection: push-in twin terminals
Fixing: insertion
Packaging unit: 1000 pcs.
Type: 64305



Temperature rating: T210 (410 °F)
Housing material: PET GF
Colour: natural white
Connection: push-in twin terminals
Fixing: click-in
Packaging unit: 200 pcs.
Type: 64314



COOKER HOODS

Lampholders and Accessories for Cooker Hoods

Nominal rating: 2/250
 Connection: For stranded conductors with ferrule on bare end of core
 Ø 1.4–1.8 mm / AWG15/AWG13



GZ10/GU10 Lampholders

Temperature rating: T270 (518 °F)
 Housing material: LCP
 Colour: natural white
 Connection: push-in twin terminals
 Fixing: holes for screws M3
 Packaging unit: 1000 pcs.
Type - GU10: 31000
Type - GZ10/GU10: 31010



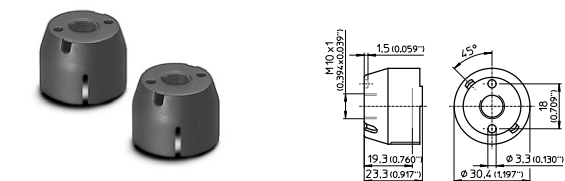
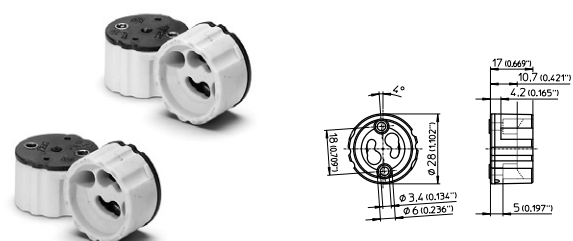
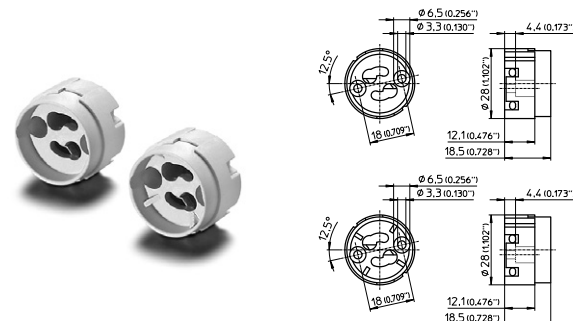
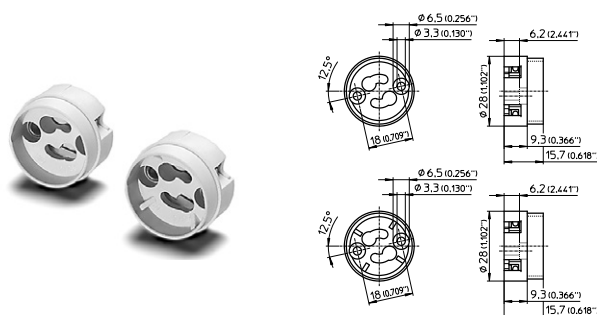
Temperature rating: T180 (356 °F) / T270 (518 °F)
 Housing material: PBT GF / LCP*
 Colour: natural white
 Connection: push-in twin terminals
 Fixing: holes for screws M3
 Packaging unit: 1000 pcs.
Type - GU10: 31020
Type - GZ10/GU10: 31030



Temperature rating: T240 (464 °F)
 Housing material: steatite
 Cover plate material: PPS
 Connection: push-in twin terminals
 Fixing: holes for screws M3
 Packaging unit: 500 pcs.
Type - GU10: 31705
Type - GZ10/GU10: 31755

Accessories

Cover cap
 Material: PA GF
 Colour: black
 Moulded thread: M10x1
 Fixing: holes for screws M3
 Compatibility: 310..
Type: 97244





LED Solution

For Dishwasher Applications

■ OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field



For dishwasher applications

Approvals



CE conformity

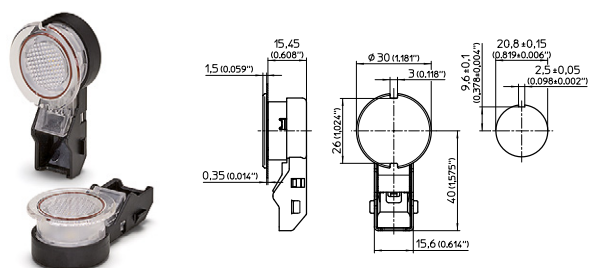
DISHWASHERS

LEDSpots for Dishwashers

For cut-out Ø 20.8 mm / 0.819 in

Colour rendering: $R_a > 80$

Fixing: bayonet



DW

Lens material: PSU
 Gasket: silicone
 Colour temperatures: 6500 K
 t_c max.: 100 °C / 212 °F
 Lumen maintenance: L70/B50 50,000 hrs.
 ($t_p = 85$ °C / 185 °F)
 Electrical connection: RAST 2.5 – 3 ways
 Packaging unit: 160 pcs.

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LDW002	6 V	35	122	—	0.7
LDW001	65 mA	17	—	2.9	0.2

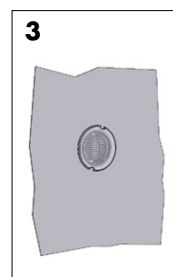
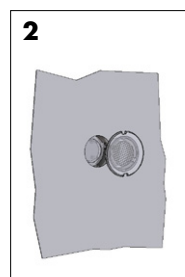
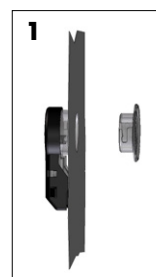
Tolerances of electrical and optical data: ±10%

Emission data at $t_p = 85$ °C / 185 °F (4000 K)

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Mounting instructions

1. Put the back assembly in place behind of the dishwasher wall.
2. Fit the lens and back assembly together, and screw the lens clockwise until it stops.
3. With that firmly in place, connect the leads.





LED Lamp and Lampholders

For Refrigerators

■ OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field



For refrigerators

Safety information



IP40 protection

Approvals



CE conformity



ENEC approved

REFRIGERATORS

LED Lamps for Refrigerators

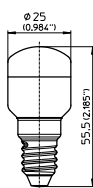
With E14 screwfix

Colour rendering: $R_a > 80$
 Fixing: E14 base



LED Lamp

Lens material: plastics
 Beam angle: 120°
 Colour temperatures: 6500 K
 Allowed operation temperature: -15 to 45 °C / -5 to 113 °F
 Packaging unit: 100 pcs.
 Rated average life for
 T26-1 230 V: 15,000 h at 25 °C / 77 °F (L70/B50)
 T26-1 110-240 V: 25,000 h at 25 °C / 77 °F (L70/B50)



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
T26-1	110-240 V	160	—	—	1.5

Tolerances of electrical and optical data: $\pm 10\%$
 The values contained in this data sheet can change due to technical innovations.
 Any such changes will be made without separate notification.

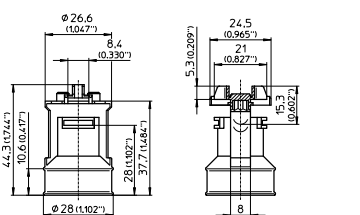
Lampholders and Accessories for Refrigerators

Nominal rating: 2/250
 Temperature: for applications up to
 -200 °C / -392 °F
 Connection: For solid and stranded conductors
 0.5–1.5 mm² /
 AWG20/AWG15

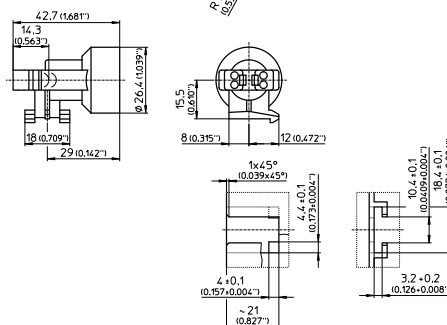


E14 Lampholders

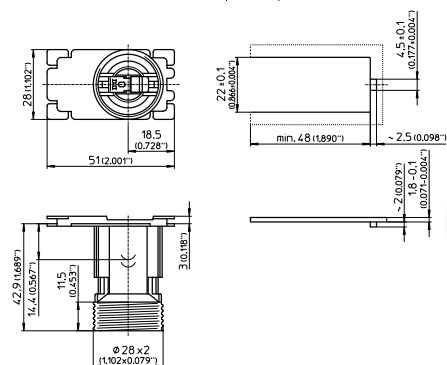
Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: insertion
 Packaging unit: 1000 pcs.
Type: 64365



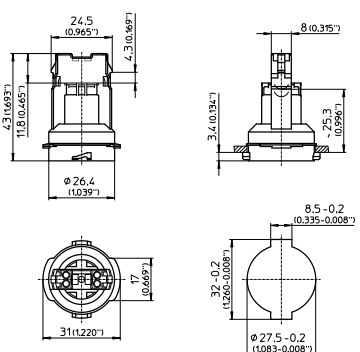
Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: click-in
 Packaging unit: 1000 pcs.
Type: 64311



Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: click-in
 Packaging unit: 500 pcs.
Type: 64312



Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: clipping-in, bayonet
 Packaging unit: 1000 pcs.
Type: 64316



REFRIGERATORS

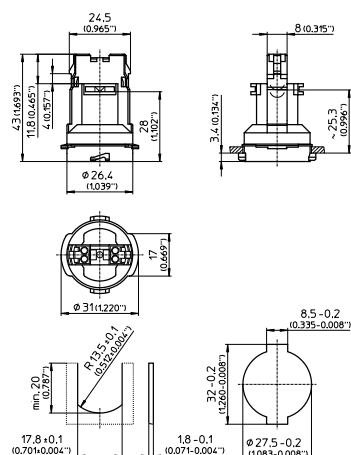
Lampholders and Accessories for Refrigerators

Nominal rating: 2/250
 Temperature: for applications up to -200 °C / -392 °F
 Connection: For solid and stranded conductors 0.5-1.5 mm² / AWG20/AWG15

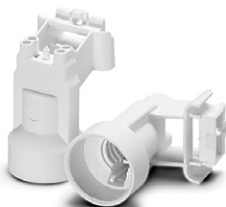
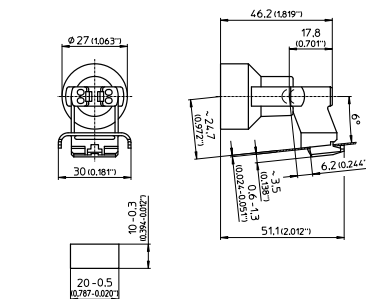


E14 Lampholders

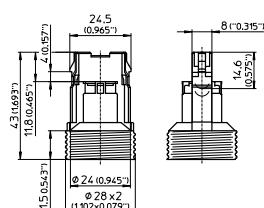
Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: insertion, clipping-in, bayonet
 Packaging unit: 1000 pcs.
Type: 64308



Temperature rating: T180 (356 °F)
 Housing material: PBT GF
 Connection: push-in twin terminals
 Fixing: lateral push-fit foot
 Packaging unit: 1000 pcs.
Type: 64307

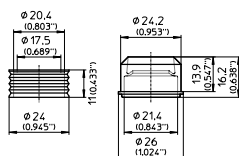


Temperature rating: T210 (410 °F)
 Housing material: PET GF
 Connection: push-in twin terminals
 Fixing: clipping-in
 Packaging unit: 1000 pcs.
Type: 64360



Accessories

Front gasket: as lamp safety catch and for protection against moisture acc. to IEC 60079-15
 Material: Elastomer
 Compatibility: 64308, 64316
Type: 98013




LED Constant-voltage and Constant-current Drivers









■ OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Technology

	Constant-voltage operation 12 V
---	------------------------------------

Safety information

	IP protection (f.e. IP20)
	SELV (Safety Extra Low Voltage)
	Protection class I
	Protection class II
	Independent operation
	Doubled short-circuit protection
	Temperature protection up to 100 °C
	Temperature protection up to 110 °C



Suitable for installation in
furniture and on
combustible surfaces



Overload protection



Overtemperature protection



Protection against
"no load" operation

Service life and warranty



Minimum service life
50,000 hrs.



Minimum service life
30,000 hrs.



Product guarantee 5 years

Approvals



CE conformity



EAC conformity



ENEC approved



RCM approved



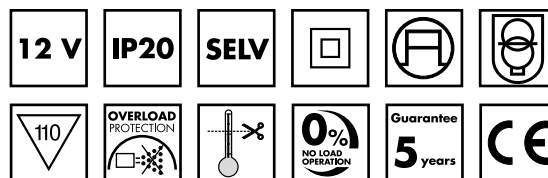
TÜV approved

12 V CV Drivers

LED Drivers CV 12 V

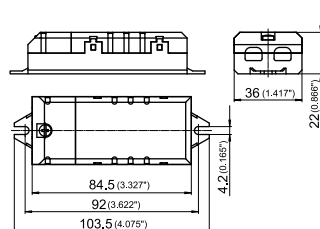
Output: max. 12 W or 20 W
Mains voltage: 220–240 V, 50–60 Hz
Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

Degree of protection: IP20
Protection class: II

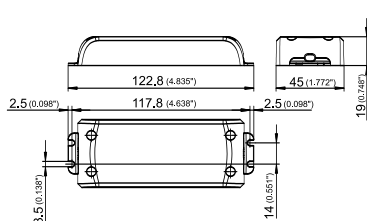


Capacity range W	Ref. No.	Output voltage V \pm 5%	Output current A	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at t_p 65 °C/149 °F	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection Screw terminals
12	186204	12	0–1	> 0.57 C	> 89	100,000 h	75/167	–20 to +50 / –4 to +122	0.2–1.5 mm ² / AWG24/AWG15
20	186620	12	0–1.68	> 0.5 C	> 85	50,000 h	75/167	–15 to +45 / +5 to +113	0.5–1.5 mm ² AWG24/AWG15

186204



186620

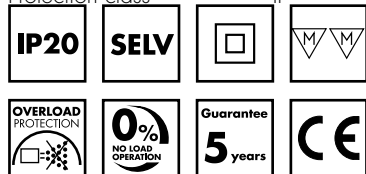


LED CC Drivers

Output: max. 7 W, 8.75 W or 20 W
 Mains voltage: 220–240 V, 50–60 Hz
 Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

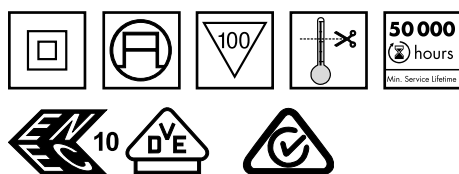
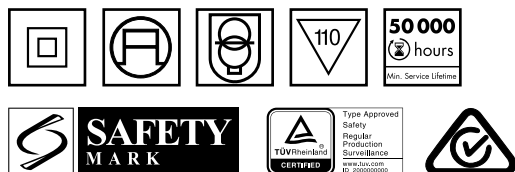
Degree of protection: IP20

Protection class II

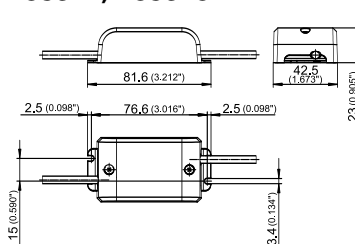


LED CC DRIVERS

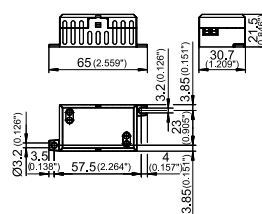
Capacity range W	Ref. No.	Output current mA	Voltage output DC (V)	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at max. t_p point temp. hrs.	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection terminals/ leads
350 mA									
7	186342	350 $\pm 5\%$	8.4–20	> 0.5	> 70	50,000	65/149	75/167	leads
8.75	186519	350 $\pm 5\%$	3–25	> 0.6	> 78	100,000	70/158	80/176	screw 2.5 mm ² / AWG13
11	186679	350 $\pm 5\%$	2–32	> 0.55	87	100,000	60/140	70/158	screw 0.5–2.5 mm ² / AWG20/AWG13
700 mA									
5.6	186348	700 $\pm 5\%$	2.8–8	> 0.5	> 70	50,000	65/149	75/167	leads
17	186681	700 $\pm 5\%$	2–25	> 0.55	87	100,000	60/140	70/158	screw 0.5–2.5 mm ² / AWG20/AWG13



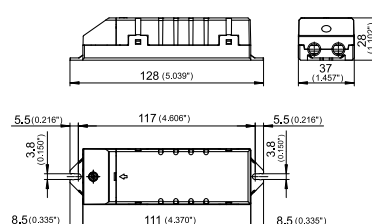
186342, 186348



186519



186679, 186681



Technical Details

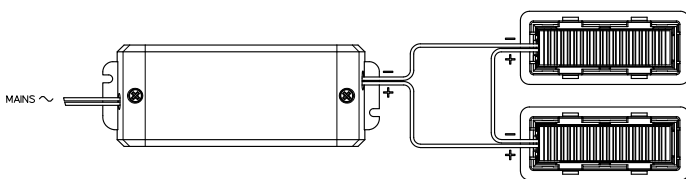
Conductors for installations

All conductors must be selected to suit the lighting application conditions (see table) in terms of material, cross-section and insulation. Testing these conductors under worst case conditions is essential as the commonly occurring high temperatures considerably reduce the conductivity of the conductor and hence its current-carrying capacity.

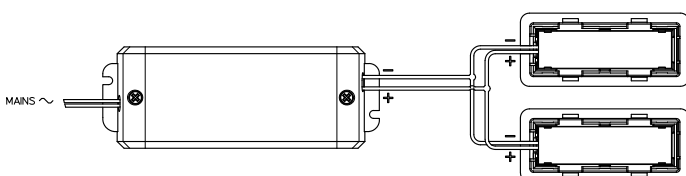
Insulation	Conductor Material	Cross-section mm ²	Mains voltage V	Max. temperature °C / °F
PVC	Cu/Cu tin-plated	0.35	300	105 / 221
SI	Cu tin-plated	0.75	300	180 / 356
FEP	Cu tin-plated	0.75	300	180 / 356
FEP/FEP	Cu tin-plated	0.25	450/750	180 / 356
PTFE	Cu tin-plated	0.50	500	180 / 356
PTFE	Cu nickel-plated	0.75	500	250 / 482
PTFE	Cu nickel-plated	1	500	250 / 482
PTFE	Ni	1	500	250 / 482
PTFE	Ni	1.5	500	250 / 482

For consultation only

LED spotlights connected in series



LED spotlights connected in parallel



Wiring Diagrams for LED

LED spotlights driven by a constant current source are highlighted with the 350mA or 700mA lettering. The constant current driven LED spotlights must be connected in series.

LED spotlights driven by a constant voltage source are highlighted with the 12V or 24V lettering. The constant voltage driven LED spotlights must be connected in parallel.

Failing to observe these directions lead to irreparable LED damage. LED spotlights may be destroyed if the polarity of the converter's output and LED's input is incorrect. Installation must be carried out in a voltage-free state (i.e. disconnected from the mains).

Tuneable White (Common Anode)

The dynamic white or tuneable white technology allows spotlights to change colour from one temperature to another depending on one's preferences.

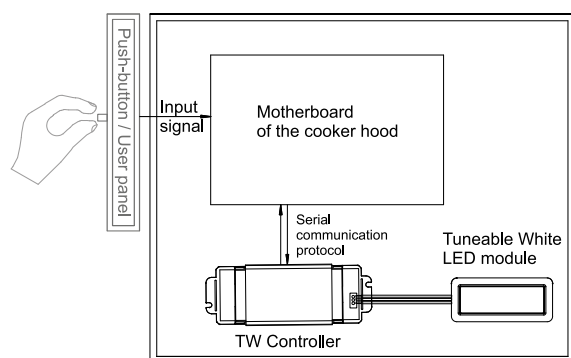
All products with the CA mark are tuneable white technology ready and are designed according to the **C**ommon **A**node (CA) principle, which means that the common anode is connected directly to the positive source and one driving element is connected to each LED array cathode.

For example, the TW driver could apply a PWM signal variable on both channels (warm and cool) to change colour temperature.

Possible configurations to drive a TW CA spotlight

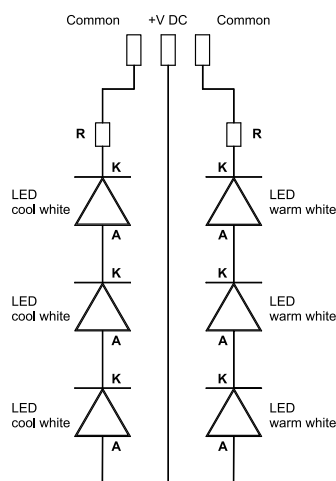
1. Through an external TW controller that communicates with the cooker hood's motherboard by a predefined digital protocol (typical serial data protocol). The cooker hood's motherboard takes the input from the user panel and sends data to the TW controller device. This configuration it is necessary to know the cooker hood's motherboard serial data protocol.

Diagram of an external TW CA control device connection




2. Through a built-in TW CA controller on the cooker hoods' motherboard. For this configuration we recommend to ask your electronic partner for more information.

Diagram of a common anode configuration



Contacts

Market	Address	Phone / Email
EMEA Vossloh-Schwabe Italia S.p.A.	Via Strada S. Martino, 15 47027 Sarsina (FC), Italy	Office: +39 0547 98 111 vsi@vsi.vossloh-schwabe.com
USA, Canada, Mexico Francesco Saracino Sales	Via Strada S. Martino, 15 47027 Sarsina (FC), Italy	Office: +39 0547 98 215 Mobile: +39 380 2675 177 francesco.saracino@vsi.vossloh-schwabe.com
South America Panasonic do Brasil Limitada Guilherme Covas Frighetto Sales	Av. Do Cafe, 277 – Bloco – A, 8 andar – Jabaquara CEP: 04311-900 Sao Paulo, SP, Brasil	Office: +55 11 3889 4137 Mobile: +55 11 95968 9099 frighetto.guilherme@br.panasonic.com
Turkey Murat Balcioglu Turkey Sales Agent	Perpa Ticaret Merkezi A Blok Kat: 10-11-12 No: 1448 Okmeydanı 34384 Şişli, Istanbul, Turkey	Office: +90 212 210 1235 Mobile: +90 532 346 5360 mbalcioglu@vsv.vossloh-schwabe.com



Whenever an electric light goes on around the world, Vossloh-Schwabe is likely to have made a key contribution to ensuring that everything works at the flick of a switch.

Headquartered in Germany, Vossloh-Schwabe has been a member of the global Panasonic group since 2002 and counts as a technology leader within the lighting sector. Top-quality, high-performance products form the basis of the company's success.

Vossloh-Schwabe's extensive product portfolio covers all lighting components: LED systems with matching control gear units and state-of-the-art control systems (LiCS) as well as electronic and magnetic ballasts and lampholders.

A member of the Panasonic group **Panasonic**

Vossloh-Schwabe Italia S.p.A.

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SOLUTIONS**

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